

# ***NAVY MEDICINE***

*July-August 1987*

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## ***NAVY DENTAL CORPS***



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**COVER:** *Navy Medicine* honors the Dental Corps and its 75 years of service. Art by Sunni Walker.



# Navy Dentistry

## Asset Past and Future

Navy dentistry has traditionally been positioned on the leading edge of its profession. Not only has Navy dental practice kept pace with the latest developments in clinical practice and technology, it frequently *sets* the pace for the field. You have a proud and enviable record by any measure.

The 1990's will be years of challenge for all of us in the Medical Department. The leadership-oriented attitude which has long characterized Navy dentistry will be one of our most valuable assets during this crucial time. The dental health of the fleet, Fleet Marine Force, the uniformed shore establishment, the Naval Reserve, and the contingency medical capability of the dental community translate into vital parts of fleet readiness. Accordingly, everyone in Navy dentistry must make a personal effort to acquaint our line and staff corps colleagues with the facts about the dental contribution to Navy capability. I want to give high visibility to the importance of the dental role in Navy medicine's direct support of the Navy and Marine Corps mission and that of our Reserve components.

There are two other dental professional groups I wish to recognize. One is the skilled and dedicated enlisted corps of dentistry—the men and women of the dental technician rating. Their work is exceptionally important in helping to maximize the utilization of dental officer assets by effective personal and technical support. Their's is a sustaining role of great and lasting importance. The other component so valuable to Navy dentistry is the Dental Corps of the Naval Reserve. The citizen-sailor has long been a stalwart of the Navy in both peace and war and critically important when the chips are down. This has been especially true in Navy medicine and uniquely true in the dental Reserves.

Seventy-five years of excellent achievement and a challenging future offer something for everyone to consider. Be assured of my strong and continuing support of Navy dentistry, and my commitment both to a sound, viable Navy dental program and to the people who have made it the best in the world.

VADM James A. Zimble, MC

## Happy 75th to the Dental Corps

This year is the landmark 75th anniversary of the Navy Dental Corps. Ever since President Taft signed legislation that gave it life on 22 Aug 1912, the Dental Corps has served the Navy with pride and distinction as a dynamic, integral part of our Medical Department. For three-quarters of a century Navy dental officers and their commands have earned an impressive and inspiring number of unit and personal awards for combat bravery and merit, including the Medal of Honor.

Today, 1,720 men and women staff the Dental Corps, with 20 percent serving with the operating forces aboard 74 ships and deployed with the Fleet Marine Force. Dental technicians fulfill their important role by highly technical support of our Navy/Marine Corps dental program.

Professional excellence and emphasis on advanced education have always been Dental Corps' strengths. The Naval Dental School ranks among the finest in the world as a center for graduate medical education. Postgraduate dental continuing education courses, residency and casualty care training, and correspondence courses have been part of the Dental School's curriculum, which continue in a state-of-the-art facility at the former Naval Hospital in Bethesda, MD. There, Navy dentists are being introduced to the latest in implantation technology and to other techniques which lead the field.

Navy dentistry's contributions to the profession are a foundation for modern dental practice. Much of the equipment in today's modern dental offices around the world originated from Navy dental research: the high-speed air turbine handpiece used to prepare teeth for fillings or crowns, the ultrasonic vibration instrument used to clean teeth, and the matrix band employed in the placement of filling materials.

Today, Navy dental research continues to work in such areas as computer-assisted dental diagnosis for independent duty corpsmen, electronic transmission of radiographic films for forensic identification, regenerative tissues and materials for the head or neck destroyed by traumatic injury, and infection control. As in the past, the future of Navy dentistry promises to be one of innovation, energy, change, and improvement of the profession.

Navy dentists, as important members of the Medical Department team, are ready and able to assume their responsibilities in combat. With our increased emphasis on readiness, dental officers have been prepared with more and better contingency training in combat casualty care, a critically important role in the lifesaving health-restoring process which is our Medical Department's principal mission.

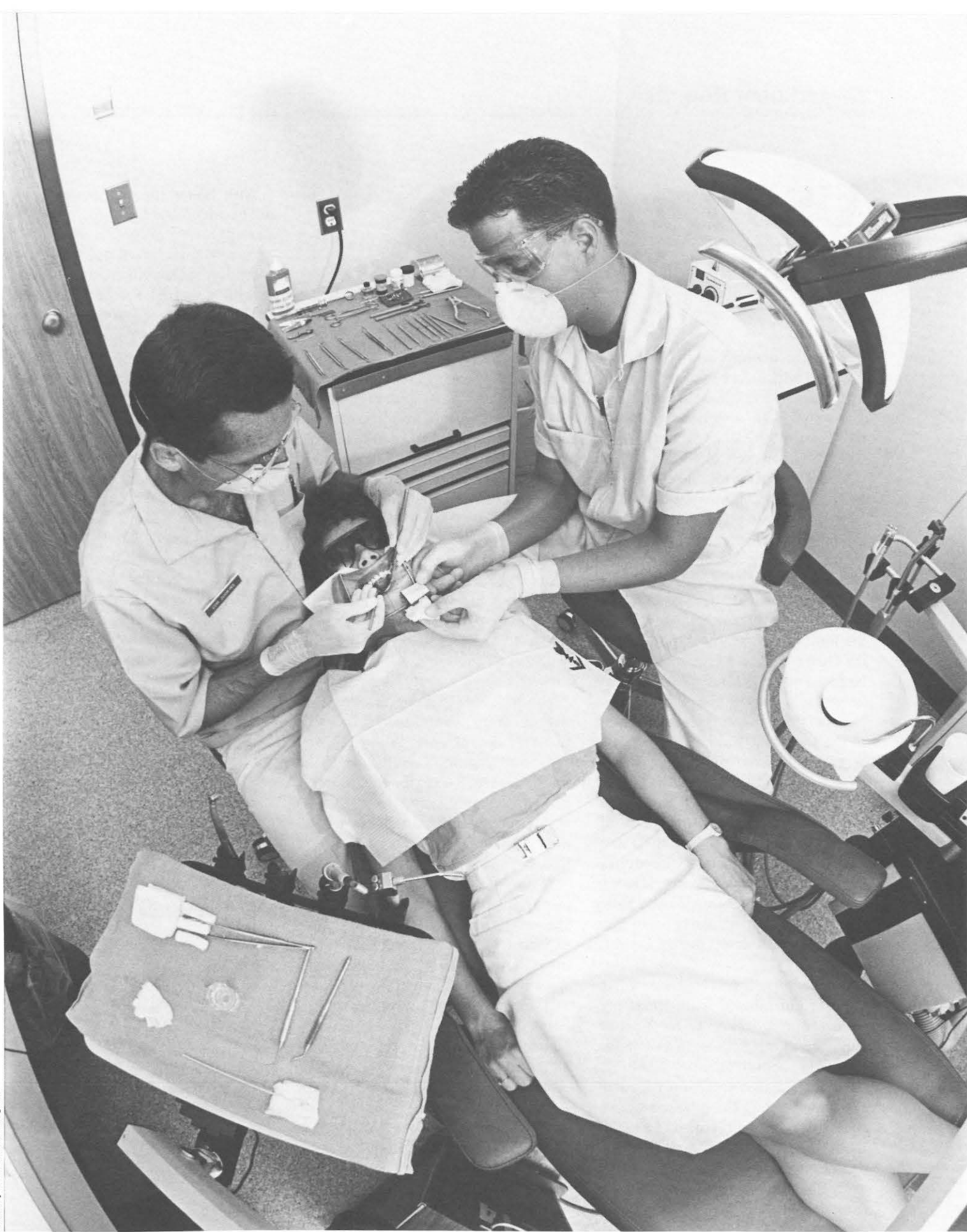
The 1990's will be as challenging for the Dental Corps as it will be for all of us in Navy medicine. In addition to refining contingency requirements and standards of care for dental specialties, the future of dental insurance for dependents will be an important priority.

The Dental Corps has come a long way in its first 75 years. It has been a source of dynamic change and progress; thoughtful and respected standards of care and a highly positive, achievement-oriented part of Navy medicine. These qualities and others prepare Navy dentistry well for the known and unknown challenges of the years to come as we face together the military medical environment extending toward the year 2000.

RADM Joseph S. Cassells, MC

*Right: CDR James T. Judkins, DC, and DT3 Christopher T. Crane practice modern dentistry in a well-equipped operator.*





# USS *La Salle's* Dental Department

Perhaps no dental unit in the Navy is involved with as broad and diversified an area of operation as that of USS *La Salle* (AGF-3), affectionately called the "Great White Ghost of the Arabian Coast" by her crew of 500.

The ship's travels have included Indian Ocean shipping lanes that extend to the East Coast of Africa from Djibouti to Kenya, range to 20 degrees south latitude to the islands of Mauritius, and as far east as Pakistan on the Indian subcontinent. Additionally, another recent tour broadened the limit of operations as far north as the Gulf of Aqaba on the Red Sea. The largest amount of underway time was, however, spent in the Persian Gulf north of the Strait of Hormuz and west of the Iraqi and Iranian war zone.

As flagship for Commander Middle East Force (COMIDEASTFOR), *La Salle* provided logistical and other support services to naval units attached to the fleet. One of these support services involves the dental department. It plays an integral role in maintaining dental readiness among the 25 ships that regularly rotate into Middle Eastern waters during a typical year.

Since assigned destroyers and frigates are not billeted with dental personnel during their 4- to 7-month deployment, *La Salle* is, in most cases, the only dental facility available, except for a carrier group they may encounter during the inbound or outbound leg of their cruise. Although CONUS commands closely monitor dental screenings in efforts to help prevent dentally unqualified personnel from deploying with a ship, true dental emergencies do occur.

On my cruise with *La Salle*, dental and medical emergencies were given top priority status, and every effort was made to ensure personnel arrived at the dental spaces in the shortest time. Their arrival patients involved some time-tested ship-to-ship transfers which included helicopter flights, small boat transfers, highline transfers, and simple brow-to-brow passages during one of the pierside visits in Bahrain, *La Salle's* main port of call in the western Persian Gulf.

On more than one occasion a frigate or destroyer's request for multiple type-2 examination appointments was answered with a hasty flight deck-to-flight deck SH-2 helicopter transfer of dental officer, dental technician, and portable dental unit. While utilizing the requesting ship's sickbay overhead battle lantern, X-ray viewer, and sterilizer unit, annual exams were given as the ship continued its high-tempo operations with minimal loss of man-hours.

Routine dental appointments were arranged 2 weeks in advance, and these times coincided with the expected proximity of *La Salle* to the other ships. Since Middle East Force ships were spread over long distances and several operating sectors of the Persian Gulf, it was imperative that planning for the helicopter transfer of patients took into account the range of "Desert Duck Airline's" SH-3 *Sea King* assigned to HS-1 and also the prevailing state of the Iraqi-Iranian air war. As has happened frequently, the volatile situation within the gulf has been responsible for canceling many scheduled evolutions at a moment's notice.

With billets for one dental officer and two dental technicians, the department provided all phases of dentistry with emphasis given to preventive, operative, endodontics, and surgery. Several nonrated seamen from deck divisions added additional manpower as they participated in the dental striker program. Two well-equipped operatories, radiology room, and prosthetic lab enabled department personnel to maintain a high volume practice in comfortable surroundings.

Since *La Salle* was forward deployed and away from CONUS ports for up to 8½ years at a time, supplies were ordered well in advance of expected usage. Along with tons of other provisions, the dental materials arrived on board an Air Force C-5, *La Salle's* lifeline to Navy supply depots in the United States.

The combined manning of six Middle East Force units tasked the dental department with providing services for 1,950 crewmembers. During regular port visits to Bahrain, the Navy's Administrative Support Unit, Bahrain, added to the patient load by supporting the 300 active duty sailors,

*Roadside dental clinics with foot-powered drills are common in several Middle Eastern countries.*







*At low tide a teakwood dhow rests on the muddy floor of the Indian Ocean.*

their dependents, retired personnel, and Department of Defense schoolteachers who were stationed on the desert island.

While entry into most Middle Eastern countries is virtually impossible except for business and diplomatic personnel, *La Salle's* many port visits allowed crewmembers the opportunity to tour eastern lands and view cultures that few westerners will ever realize. Casual walks through narrow winding alleyways revealed noisy, bustling, open air markets that were occasionally pierced by the central mosque's call to prayer, the signal for Muslims to direct their worship toward the holy city of Mecca. These same passages served as office space for self-taught dentists. Under a shade tree, patients were treated with a foot-powered drill and several hand instruments of questionable origin.

In almost every Persian Gulf port, sailors could observe white-robed, barefoot artisans practicing the age-old art of constructing teakwood dhow boats. Built exclusively with simple hand tools, the 50-foot merchant and fishing vessels could be seen navigating in the same sea states and through the same waters as that of the most powerful Charles F. Adams or Spruance class destroyers. Additionally, the annual southern swing into

east African ports allowed *La Salle* sailors time to pursue photographically some of the world's most majestic animals while rumbling along in land rovers through the Amboseli Game Preserve and Masai warrior tribal territories.

Since being established in 1949, the Middle East Force is the only permanently assigned operational command in the Middle East. This continuous assignment has been responsible for allowing *La Salle* and COMIDEASTFOR ships to play an integral role in the ever-changing political scene of the region. The United States diplomatic missions in each of the regular 13 country port of calls represent another significant pool of dental patients. Due to the relative isolation of many American embassies on the African continent, dental treatment aboard the ship was a pleasant alternative to the several-thousand-mile flight to military installations in West Germany. Marine, Air Force, and Army liaison personnel were likewise treated during all visits.

The foreign fleets that operate in waters patrolled by Middle East Force ships regularly combined to hold joint maneuvers. During these evolutions French and British sailors were brought on board and rendered emergency dental treatment. These different rendezvous allowed department personnel the chance to go aboard other combatants to be introduced to the traditions and hospitality of friendly forces.

*La Salle's* presence on the Middle East scene offered occasions to view unfriendly forces as well. Iranian Saam class cruisers, on more than one occasion, were observed shadowing *La Salle* as she rounded the coast of Oman before transiting the Strait of Hormuz. While anchored off the coast of Aden, South Yemen, less than 3 miles away, Russian Ropucha and Kara class men-of-war remained poised and ready to evacuate Soviet citizens. As an aftermath of missile launches from Iraqi and Iranian warplanes, one could observe the scorched and crumpled superstructures of huge

oil tankers as ocean-going tugs towed them toward drydock facilities in Bahrain.

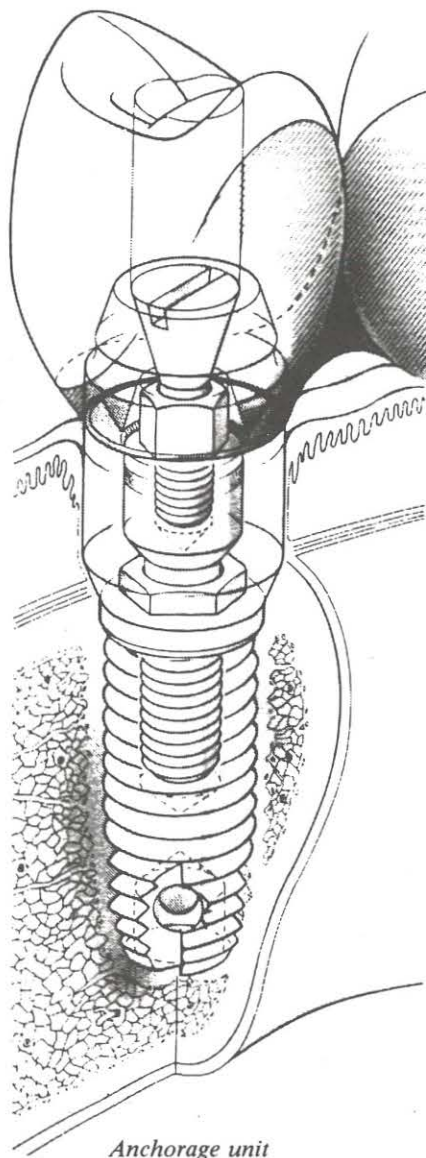
Port visits on the African continent allowed the positive image of the United States to be strengthened by rendering needed dental care to Ethiopian refugees who were being cared for in a Mogadishu, Somalia, orphanage. For most of the 125 children who were examined and treated during the 4-day visit, it was their first dental experience. Despite the many logistical and political hurdles that occurred, the scope of treatment included hand scaling and polishings, fluoride rinses, simple extractions, and group brushing/flossing demonstrations.

Probably the longest lasting effects of the orphanage visit were the basic oral hygiene lectures and preventive dentistry materials donated by crewmembers to the Canadian nursing students who acted as guardians to the orphans.

Similar treatment was rendered on several occasions to students of a state-run boys school on the outskirts of Karachi, Pakistan. As seen in most cultures, caries and periodontal problems appeared in significant numbers of all groups treated. Although the addictive habit of chewing betel nut and its associated oral diseases are rarely seen in the United States, children as young as 5 years old were seen using the stimulant. Unfortunately, we also saw the high dietary intake of refined sugar, with its associated problems, among many of the African countries' population.

As *La Salle* remains the flagship for COMIDEASTFOR, the dental department will continue to provide needed treatment to personnel within that command in addition to diplomatic missions that help support American interests in the Middle East, East Africa, and the southern Indian Ocean. Those receiving orders to a tour aboard *La Salle* can be assured of being involved with some of the Navy's most adventurous activities. □

—Story and photos by LT Thomas D. Walczyk, DC, Branch Dental Clinic, NAS Whidbey Island, WA.



# Osseointegration Training in the Dental Corps

CAPT R.J. Flinton, DC, USN

Once again the Navy Dental Corps is in the forefront of dentistry. On 1-4 June 1987 the Naval Dental School, Bethesda, MD, sponsored a continuing education course in osseointegration, the most successful type of implant dentistry.

Osseointegration, a named coined by Dr. P.I. Branemark, an orthopedic surgeon and bone physiologist, is "the direct structural and functional connection between ordered, living bone and the surface of a load-carrying implant." It is a very meticulous two-stage surgical procedure in which titanium screw fixtures are implanted into the bone using handpieces with speeds varying from 10 rpm to 2000 rpm. Special care is used to avoid exceeding the critical temperature of 47° C, a temperature beyond which the bone is irreparably damaged and osseointegration will not occur.

Once the fixtures are implanted in the bone, the surgical incision is closed and the fixtures covered completely

with the mucoperiosteal flap. During the healing phase the fixtures are isolated from oral fluids and the bone regenerates free of forces caused by prematurely loading of the fixtures. After approximately 3-4 months the fixtures are uncovered and the transmucosal abutments are connected to the fixtures. After a 2-week healing period following uncovering of the fixtures, the prosthodontic procedures can be initiated.

The prostheses to be placed on these abutments can be designed in a number of ways: a cantilevered fixed partial denture, an overdenture with anterior bar, or a removable prostheses, totally fixture supported. The desires of the patient, the skill and experience level of the prosthodontist, and economics all influence the treatment modality selected.

Osseointegration has placed implantology in the forefront of dentistry. It is the state of the art for rehabilitation of the severely compromised edentulous patient. Osseointegration will also become a very important treatment modality for use in external prostheses for maxillofacial prosthetic rehabilitation of

Dr. Flinton is chairman, Prosthodontics Department, Naval Dental School, Bethesda, MD, and specialty advisor to NAVMEDCOM for implantology.





*Prosthodontist prepares sample bone for fixture placement.*

patients after surgical procedures to remove pathology, or repair damage caused by trauma.

Since 1984 the Commission on Dental Accreditation of the ADA required that implantology be included as a treatment modality within the specialties of oral and maxillofacial surgery, periodontics, and prosthodontics. It, therefore, became mandatory that the mentors of these Navy residency programs receive formal training in osseointegration. It was also hoped that the Naval Dental School would become an official training site for osseointegration.

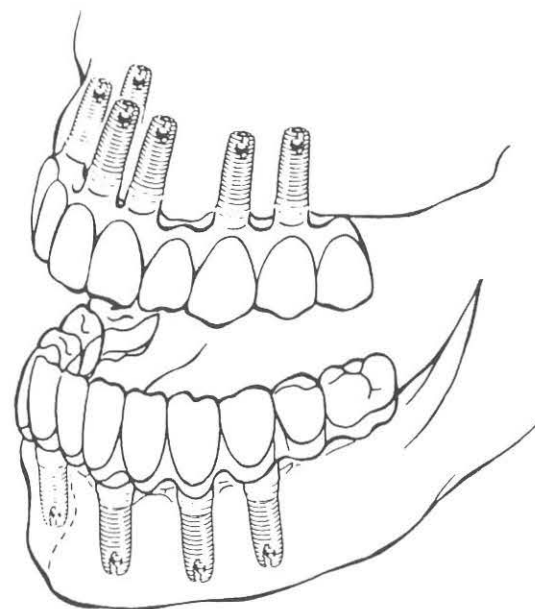
The Branemark system was chosen because it was the only system that had documented clinical research data with over 20 years of proven success that exceeded the ADA guidelines of 75 percent success for 5 years, and it was the only system that had received "provisional approval" by the ADA. CAPT Bob Flinton, chairman of the prosthodontics residency program and CAPT Jim Mellonig, chairman of the periodontics residency program, were sent to the University of Gothenburg in Sweden to receive training under Dr. Branemark and his staff.

Four teams were invited to participate in this one-time 5-day course in the treatment of the partially edentulous arch. CAPT Jerry Nieusma, chairman of the oral surgery department, and CAPT Don Mitchell, chief of the maxillofacial residency program, were sent to study osseointegration at the Mayo Clinic in Rochester, MN.

After months of budgetary reviews, sole-source justifications, and endless debate, funds were allocated to purchase the first Nobelpharma System in the U.S. military. At this time, the Chief of the Navy Dental Corps issued a policy statement for implantology within the Navy and authorized this treatment modality for use at the five Navy training hospitals. It was also recognized that implantology should be included in all Navy oral surgery residency programs and that the most cost-effective way to train residents and mentors would be to sponsor the course at the Naval Dental School. Nobelpharma USA, the manufacturer and distributor of the Branemark system, conducted this training at the Naval Dental School.

Support for the lecture program was superlative. Nobelpharma agreed to

send their premier oral surgeon, Dr. Ulf Lekholm, and prosthodontist Dr. Torsten Jemt, both members of the staff of the Odontologic Institute in Gothenburg, to present the course. Mentors, residents, and other specialists supporting the teaching programs were invited to attend. Once again,



*Diagnostic representation of patient restored with osseointegrated fixtures.*

professionalism within the Navy Dental Corps was evident. All invited were anxious to attend, and many traveled on permissive orders only. It was estimated that perhaps 50 people would attend, when in fact, 69 officers did so.

Nobelpharma shipped in 42 crates of equipment and instruments and brought a nine-person team to assist in

assembled to watch live surgical procedures performed by Dr. Lekholm on closed-circuit TV. Three surgical procedures were performed: fixture placement in the maxillary arch, fixture placement in the mandibular posterior arch, and the second surgical phase of uncovering previously implanted fixtures.

There was also a 1-day seminar for surgical assistants conducted by Ms. Astrid Keifert, a surgical nurse. Ms. Keifert travels throughout the world to assist doctors and staff during their initial fixture placement. Eleven surgical nurses participated in the "hands-on clinic" that was conducted simultaneously with the surgical and prosthodontic phase of the program. Topics discussed included sterilization and packaging, surgical setup, surgical assisting, and cleanup.

The officers of the Dental Corps should be proud of the status of implantology within the Navy. In less than 3 years, all teaching hospitals have a system on board. Three centers are already placing fixtures. Ten surgical assistants and two laboratory technicians have been trained in the Branemark system. Seventy-five specialists in the Dental Corps who participated in this comprehensive course in osseointegration are now credentialed in implantology.

The success of implantology within the Navy rests with us. The Navy policy must be closely followed. It must also be recognized that implantology within the Navy is not a treatment procedure for all patients. Strict guidelines must be established for case selection. These procedures are limited to teaching centers, as required for accreditation of teaching programs. Accurate records must be maintained, and enhanced recall programs must be established. All information must be coordinated through the specialty advisor on implantology. This is 21st century dentistry within the Navy and our service people deserve the best that dentistry has to offer. Without the insight and commitment to excellence by the leaders of the Dental Corps, we, in the Navy, would be on the outside looking in as dentistry moves forward into the 21st century.

#### Reference

Branemark, Zarb, Albrektsson: Tissue-Integrated Prostheses—Osseointegration in Clinical Dentistry. Chicago, London, Berlin, San Paulo & Tokyo, Quintessence Publishing Co Inc, 1985. □

the program. The course was complex in design and comprehensive in scope. Since it combined both the prosthodontic and surgical phases of treatment, Dr. Jemt and Dr. Lekholm presented lectures to the combined specialist group and then conducted simultaneous "hands-on" laboratories, one for the surgeons, and one for the prosthodontists. Dr. Lekholm instructed the surgeons in placement of fixtures in ribs, and Dr. Jemt assisted the prosthodontists in the use of all the component prosthetic units. After all were introduced to the system through the lectures and laboratory exercises, the course participants were

The American team of Dr. Paul Krogh, an oral surgeon, and Dr. Dan Sullivan, a prosthodontist, conducted the fourth day of the program. Dr. Krogh and Dr. Sullivan have placed over 700 Branemark fixtures during the last 4 years, and they conduct clinics throughout the world. Through their vast experience, they have developed techniques and fixture placement procedures that have greatly improved the esthetic result. Several patients treated by Dr. Krogh and Dr. Sullivan were brought in for the course participants to examine and interview concerning their appraisal of the results.



*Prosthodontists work with fixtures as a member of the Nobelpharma team looks on.*



# The Disease Alert Report

LT R. Allen Perkins, MC, USNR  
CDR Mark L. Dembert, MC, USN

With an effective communicable disease reporting system, health officials can evaluate individual or clusters of reports on certain diseases, anticipate their potential for serious morbidity or mortality among the community and in the workplace, and intervene appropriately. In the Navy Medical Department, the Disease Alert Report, known by the acronym "DAR," serves this purpose. It is one of the most important reports utilized by preventive medicine personnel.

The DAR enables medical epidemiologists, environmental health officers, entomologists, and preventive medicine technicians (PMT's) to appraise the situational relevance of select communicable diseases worldwide occurring as single or group cases. Reports can come in from type commands, fleet units, shore facilities, embarked and deployed Marine groups, and duty stations within CONUS or as far away as Antarctica or the Indian Ocean. They can even be filed on sailors assigned to Military Sealift Command ships around the world.

The DAR has several valuable uses for the Navy Environmental Health Center (NAVENVIRHLTHCEN)—the Navy's preventive medicine command—and its four Navy Environmental and Preventive Medicine Units (NAVENPVNTMEDU's) in Norfolk, VA, San Diego, CA, Pearl Harbor, HI, and Naples, Italy:

- Monitors individual cases or outbreaks of specific communicable dis-

eases and recommends preventive measures.

- Maintains surveillance of specific diseases of geographic importance, e.g., hepatitis B and spectinomycin-resistant gonorrhea in the Western Pacific, hepatitis A in the Mediterranean, malaria from Southeast Asia and Africa.

- Evaluates patterns of compliance and efficacy for antibiotic or drug chemotherapy or prophylaxis for hepatitis, malaria, gonorrhea, etc.

- Makes recommendations to the Commander, Naval Medical Command on communicable disease policies, e.g., for tuberculosis screening, hepatitis prevention, malaria treatment and prophylaxis, immunization requirements for active duty or dependents, health care guidelines for workers in day care centers.

- Aids NAVENPVNTMEDU's in providing predeployment briefs and estimates of disease risk assessment and geographic medical information profiles for cities and countries worldwide.

- Makes additional recommendations to the Naval Medical Research and Development Command regarding communicable disease research projects of operational importance.

- Serves as a medical quality assurance tool in auditing the reporting of communicable diseases among Navy medical treatment facilities and fleet units.

DAR's are submitted for a wide range of communicable diseases. Some of these are endemic in tropical countries and frequently seen in the United States (e.g., tuberculosis). Some are very communicable in over-

seas areas but have a negligible risk of transmission in the United States (e.g., malaria). Some are comparatively more common in children (e.g., *Haemophilus influenzae* meningitis) while others are usually diagnosed in adults (e.g., syphilis). Many of these diseases have the potential to impair seriously readiness or unit maneuvers when the disease runs rampant in confined areas, e.g., staphylococcal food poisoning among a crew of a ship.

DAR's are also sent when fleet units are quarantined in foreign ports and when outbreaks of nosocomial infection occur. Finally, DAR's are submitted on land or marine animal poisonings or attacks. Prophylaxis against rabies is of great concern in the former, while one case of fish or shellfish poisoning may be "the tip of the iceberg" in an impending outbreak.

Because this is primarily a passive communicable disease surveillance system (wherein review and action are taken when a DAR is received at a NAVENPVNTMEDU), preventive medicine personnel who file these reports need to be provided with information from health care providers that is as timely, complete, and accurate. This information is outlined in Table 1.

Guidance in the use of the DAR, the list of diseases to which it applies, the preparation and format of the report, and its distribution are given in NAVMEDCOMINST 6220.2, Disease Alert Report. Table 2 lists the diseases reportable by the instruction. However, this list is periodically revised, based upon current surveillance information from military and civilian (e.g., Centers for Disease Control) public health authorities.

Dr. Perkins is assigned to Naval Hospital, Portsmouth, VA 23708-5000. Dr. Dembert is on the staff of the Navy Environmental Health Center, Norfolk, VA 23511-6695.



**TABLE 1**  
**Types of Information Provided in Disease Alert Reports**

1. Diagnosis
2. Case (patient) identification information
3. Patient status
4. Clinical information
5. Other epidemiological information
6. Existence of potential or real military or civilian health threat
7. Preventive measures taken
8. Medical/epidemiologic assistance required
9. Civilian public health authorities notified
10. Point of contact at command submitting report

The following aspects of DAR's are emphasized:

International Classification of Diseases (ICD-9-CM) codes should be correct so that counts of specific diseases are accurate when tallied from the computerized database maintained at each NAVENPVNTMEDU.

Patient name and social security number (SSN) are required in all cases, except those of sexually transmitted diseases. In the latter instance, only the SSN is used to preserve patient anonymity. The SSN will allow for accurate entry and retrieval, especially when followup information on the patient is provided and entered into the database. All cases of human immunodeficiency virus (HIV) disease—AIDS/ARC (AIDS-related complex)—require complete identifying information. However, if the originating command feels that their DAR—for whatever disease—is of a sensitive nature, then sending it as a "Personal for the commanding officer" to all appropriate addressees would be prudent.

Risk factor information relevant to the specific disease should be given. This requires the informant to use his or her knowledge of how the disease is transmitted, the incubation period, and known risk factors reported in the literature. This information is important for determining the epidemic

potential, which is made after review of the DAR. Recommendations from the NAVENPVNTMEDU epidemiologist are made if further measures need to be taken at the individual's command or base.

Information should be provided on both the enlisted rate and occupation of the individual. This information, when subsequently analyzed for many reports on the same disease, may suggest that certain occupations are at risk for that disease. Preventive measures, e.g., counseling, vaccines, work protection clothing or equipment, may be indicated to decrease that risk on the group and individual basis.

A history of recent travel with dates, itinerary, and social and eating/drinking habits helps to pinpoint where foodborne and sexually transmitted infections were acquired. This also helps local public health authorities in investigating the source, especially where more than one case occurs over a short time.

The DAR should also report what measures were taken to prevent the patient from infecting others and what advice was given to shipmates, fellow workers, and family.

The DAR is usually signed out "by direction" from the cognizant operational medical department representative or head of the occupational and

preventive medicine department (or department environmental health officer) from the medical facility initiating treatment. These reports are filed on all patients whether he or she is active duty, dependent, or retired. A DAR should also be filed on a federal civilian employee with a reportable communicable disease who is treated at the military facility or whose disease has an epidemic potential among local military personnel. The cognizant NAVENPVNTMEDU receives the original NAVGRAM or message, and a copy is sent to NAVENVIRHLTHCEN. In addition, a patient's parent command (if other than the report originator), next senior command, and appropriate type or fleet command should be notified, because line commands need to be aware of conditions which may affect the readiness or operations of a fleet unit.

A separate report should be filed on each individual case of a specific disease. However, in an outbreak of numerous cases, a DAR with aggregate numbers of cases is appropriate. In other situations, when the diagnosis is suspected in a reportable disease but there is only minimal data available on which to base the diagnosis, an initial or preliminary DAR should be promptly submitted. A followup DAR must be filed later when the diagnosis is firmly established or other relevant information is found.

Finally, if a diagnosed disease(s) is not reportable under the current instruction, and the possibility exists that a significant number of people or operational readiness can be affected, a DAR should nevertheless be promptly submitted to the cognizant NAVENPVNTMEDU.

The DAR is a vital means of communication between Medical Department personnel and preventive medicine staffs at the NAVENPVNTMEDU level and at NAVENVIRHLTHCEN. Whenever there is a question on any aspect of a DAR or a particular case, the cognizant NAVENPVNTMEDU should immediately be contacted by telephone or message for advice and assistance.



**TABLE 2**  
**List of Diseases Reportable by a Disease Alert Report**

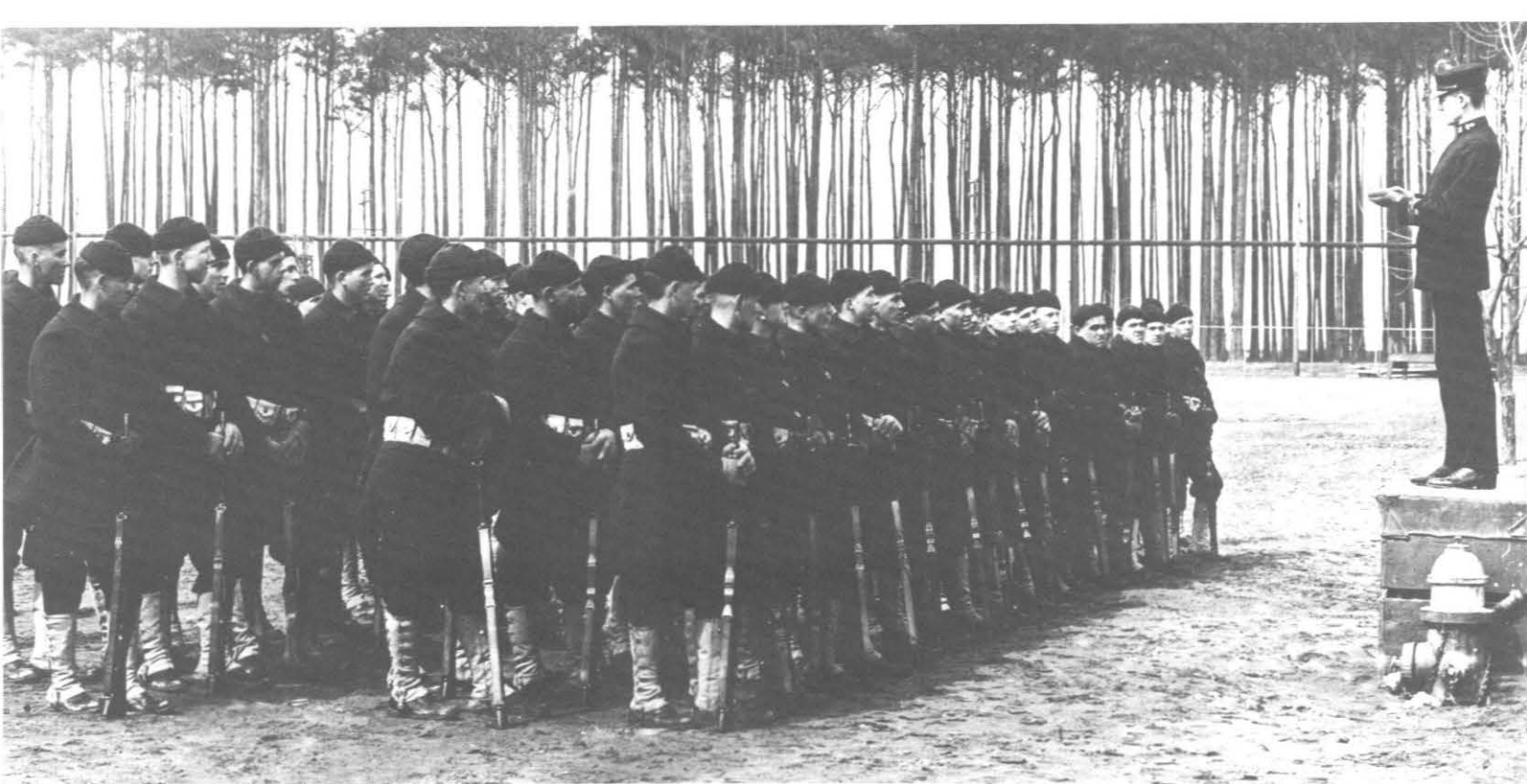
Accidental poisoning from foodstuffs and poisonous plants	Leprosy
Amebiasis	Leptospirosis
Animal-induced injury of significant morbidity	Lymphocytic choriomeningitis
Anthrax*	Malaria*
Arthropod bites or stings, venomous	Melioidosis
Arthropod-borne viral diseases other than yellow fever	Meningitis, meningococcal*
or dengue	Onchocerciasis
Bartonellosis	Ornithosis (psittacosis)
Bites, nonvenomous animals	Paratyphoid fever
Bites, venomous snake or lizard	Plague*
Blastomycosis	Poisoning or toxic reaction caused by venomous
Botulism*	marine animals or plants
Brucellosis	Poliomyelitis
Cholera*	Q fever
Coccidioidomycosis	Rabies*
Dengue fever*/dengue hemorrhagic fever*	Relapsing fever*
Diphtheria	Rickettsiosis, tick-borne
Ebola-Marburg virus disease*	Salmonellosis, other than typhoid or paratyphoid fever
Filariasis, Bancroftian or Malayan	Schistosomiasis
Gonorrhea (newly emergent antibiotic resistant strains)	Shigellosis
Hepatitis A*	Smallpox*
Hepatitis B	Syphilis
Hepatitis non-A, non-B	Tetanus*
Hepatitis, type unknown*	Toxic shock syndrome
Human immunodeficiency virus (HIV) disease—acquired	Trypanosomiasis
immune deficiency syndrome (AIDS) and AIDS-	Tuberculosis
related complex (ARC)	Tularemia*
Infectious mononucleosis with hepatitis*	Typhoid fever
Lassa fever*	Typhus fever*
Legionellosis*	Typhus scrub*
Leishmaniasis	Yellow fever*

Under the current instruction, DAR should be submitted if a group of cases of any of the following diseases occurs in excess of normal expectancy for the area and population. However, recent patterns of military and civilian communicable disease surveillance indicate that individual adult cases of chickenpox, giardiasis, measles, mumps, and rubella are still of public health concern. Thus, it would now be prudent for individual DAR's to be submitted on active duty cases of these five diseases.

Chickenpox	Measles (rubeola)
Food poisoning (e.g., staphylococcal, botulism,	Mumps
<i>Clostridium perfringens</i> , <i>Vibrio parahaemolyticus</i> ,	Rubella
<i>Bacillus cereus</i> )	Staphylococcal disease
Gastroenteritis, viral	Staphylococcal disease, group A
Giardiasis	(beta hemolytic)
Influenza	Water-borne enteric illness

\*Requires reporting by priority message





*Recruits get a preventive dentistry lecture at the Naval Operating Base, Hampton Roads, VA, 1918. Below: An open tent served as a dental operator for the Marine Corps First Brigade at Mirabalais, Haiti, in 1920.*

# *Navy Dentistry Through the Years*





# The Navy Dental Corps

## 75 Years of Excellence

RADM Richard G. Shaffer, DC, USN

The Dental Corps celebrates 75 years of service to the men and women of the U.S. Navy and Marine Corps on 22 Aug 1987. The corps' past, though brief, is rich in accomplishment, and our 75th anniversary provides an occasion to review this history.

Dr. Shaffer is Chief of the Dental Corps and Commander of the Naval Medical Command, National Capital Region, Bethesda, MD 20814-5000.

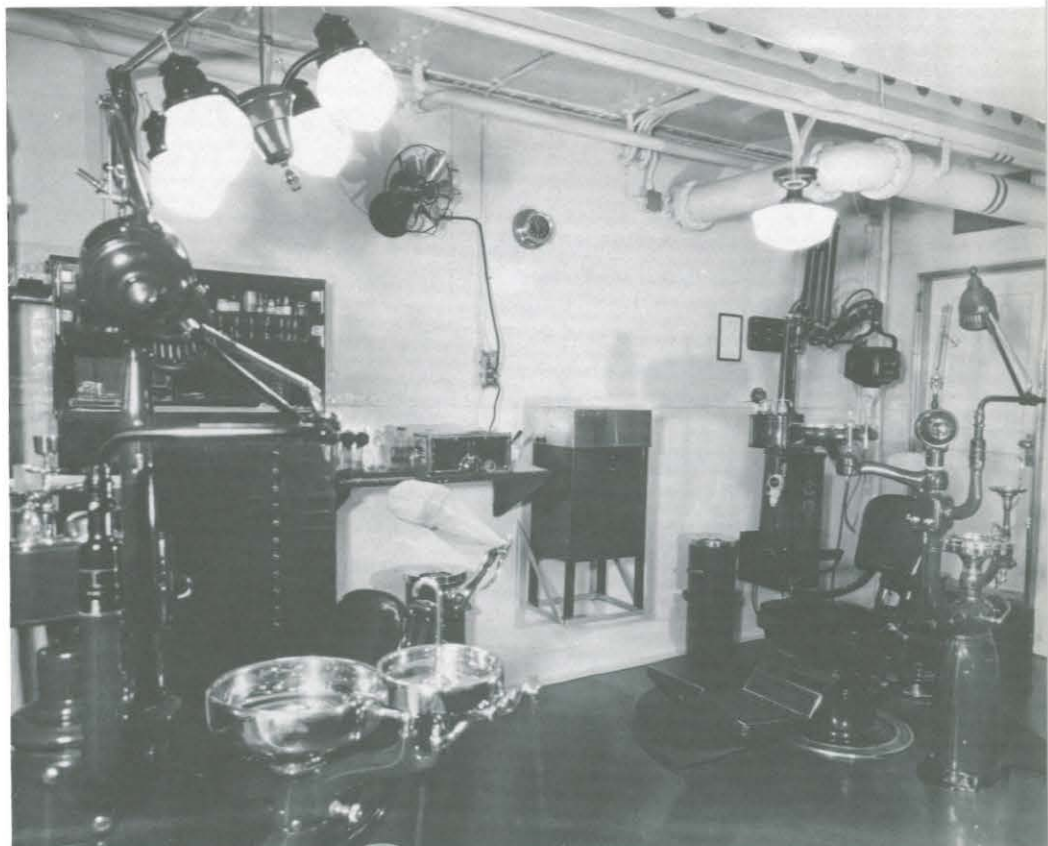
The first dentist appointed to serve as an officer in the Navy was Thomas O. Walton of Annapolis, MD. On 22 April 1873 he was appointed acting assistant surgeon at the U.S. Naval Academy. Walton was honorably discharged in 1879, but remained at the Academy as a contract dentist until he was replaced by Dr. Richard Grady on 6 Nov 1899.

In 1898 a bill was introduced in Congress to establish dental corps in

the Army and Navy. Later, dental legislation was strongly advocated by dental associations, individual dentists, and Navy Surgeon General P.M. Rixley. Dr. Williams Donnally, a Washington, DC, dentist, helped draft dental legislation. In 1912 the second session of the 63rd Congress enacted legislation authorizing the Dental Corps. Donnally and Navy Surgeon General C.F. Stokes provided key testimony in favor of the Dental Corps.



Below: *Dental Operatory, USS Saratoga, 1938.*



*Prosthetics laboratory, Naval Hospital, San Diego, 1934.*

## The Early Days

The Dental Corps traces its birth to 22 Aug 1912, when President Taft signed the bill authorizing the Secretary of the Navy "to appoint not more than 30 acting assistant dental surgeons to be a part of the Medical Department of the United States Navy." Acting assistant dental surgeons were to be appointed, and after 2 or more years of active service, they would be evaluated to determine their fitness to receive commissions as a lieutenant (junior grade). On 29 Aug 1916 Congress passed a reorganization act that authorized the rank of lieutenant and lieutenant commander for officers of the Dental Corps. (It was not until 10 June 1926 that Dental Corps officers became eligible for promotion up and including the rank of captain.) Total Dental Corps strength was set at one officer to each 1,000 authorized enlisted strength of the Navy and Marine Corps. Except for World War I, this ratio remained constant until 1935.

In October 1912 Emory A. Bryant, D.D.S., and William N. Coogan, D.D.S., were ordered to active duty to serve as acting assistant dental surgeons for the purpose of selecting candidates to serve as dental officers in the Navy. The selection board met during November and December at the Naval Dispensary, Washington, DC, and four candidates were appointed on 3 Jan 1913. One of these selectees, Dr. Harry E. Harvey, was the first dental officer to report aboard ship. He reported aboard the USS *Solace* on 5 March 1913. Another of the initial selectees, Dr. James L. Brown, was the first dental officer to be stationed overseas at the U.S. Naval Station, Guam. The year 1913 also saw Congress enact legislation authorizing organization of the Naval Dental Reserve Corps. Dr. Williams Donnally was one of the first officers appointed in the Dental

Reserve Corps.

When America entered World War I on 6 April 1917 there were 35 dental officers on active duty, but the number grew to 500 by the war's end. Most of the Regular officers commissioned during the war were assigned to ships or overseas activities. Thirty dental officers served with the Marines in France, and it was there that two of them achieved exceptional distinction. LTJG Alexander G. Lyle received the Medal of Honor while serving with the 5th Regiment, U.S. Marine Corps. LTJG Weeden E. Osborne, the first Navy officer to meet death fighting overseas in the war, was also awarded the Medal of Honor for extraordinary heroism while serving with the 6th Regiment, U.S. Marine Corps. The torpedo boat destroyer USS *Osborne* was launched in his honor in December 1919.

From its establishment until our entry into the war, the Dental Corps was still very much in the experimental stage. However, the war brought about a general recognition of the value of dentistry in the Navy, as well as an expansion in the corps. The post-war years would see the Dental Corps develop a distinct organization identity. Two events, both occurring in 1913, were of particular importance in this regard: the establishment of the Dental Division in the Bureau of Medicine and Surgery and the opening of the Naval Dental School.

The establishment of the Dental Division improved the administrative efficiency of the Dental Corps because it placed all matters concerning the corps under the direction of the dental officer in charge of the Division.

In February 1923 the Naval Dental School was opened as a department of the U.S. Naval Medical School, Washington, DC. Its mission was to provide postgraduate instruction to dental officers and train specially

detailed hospital corpsmen to serve as dental assistants. Before the establishment of the school dental officers were often sent directly to independent duty upon receiving their appointments. They would have little knowledge of the Navy, and since they were often sent to isolated duty, they were unable to consult with other dental officers or broaden the scope of their professional knowledge.

The prosthetic laboratory at the Dental School was the site of a pilot project to determine the feasibility of extending certain prosthodontic services to Navy personnel. Up to this time, services of dental officers had been limited to those measures that







would most effectively and economically preserve the teeth of personnel in ensuring physical fitness. The pilot study proved successful, and arrangements were made to extend the scope of dental activities in the Navy to include certain prosthodontic procedures, such as crown and bridgework and the manufacture of dentures. Prosthetic laboratories were to be established, and by the end of the decade, 11 laboratories were in operation.

In the 1930's the Dental Corps grew significantly in productivity, research, and educational opportunities, gaining a reputation for excellence in the dental profession. In 1935, after re-

peated requests by the Surgeon General, Congress authorized the appointment of dental officers in the ratio of 1 for each 500 of active duty strength of the Navy and Marine Corps. Since the previous ratio was 1:1,000, the corps' ability to provide care was considerably enhanced.

### World War II

On the eve of World War II 759 dental officers were on active duty at 347 dental facilities. Two Dental Corps officers were killed in the attack on Pearl Harbor—LCDR Hugh R. Alexander, aboard the USS *Oklahoma*, and LCDR Thomas E. Crowley, aboard the USS *Arizona*.

Less than a month later, the Surgeon General directed that all dental officers become proficient in the treatment of casualties, so that in addition to carrying out their regular duties they could assist in sickbays and operating rooms, administer supportive therapy, and give anesthetics. Dental officers, assisted by dental technicians, performed such duties heroically and, in some instances, at the cost of their lives.

Because of the overwhelming need for manpower, the dental requirements for acceptance into the service were lowered in May 1942. As a result, the Dental Corps began a massive rehabilitation program, which would

last throughout the war, to make Navy and Marine Corps personnel dentally fit before they could be transferred overseas.

By the end of the war 7,026 dental officers were serving on active duty and 1,545 dental facilities were in operation. Dental technicians on duty numbered 11,339. Among the dental officers and technicians on duty were 1,200 Waves. One of these Waves, LT Sara G. Krout, DC, USNR, was the first female dental officer in the Armed Forces. In 1944 she reported for duty at the Navy's largest dental facility at Great Lakes, IL.

Other events of the war years include the commissioning of the U.S. Naval Dental School as part of the National Naval Medical Center, Bethesda, MD, in 1942. Also, on 18 Dec 1942 President Roosevelt approved the rank of rear admiral for dental officers, and the following March CAPT Alexander G. Lyle became the first dental officer to be promoted to this rank.

## Postwar

In the postwar years dental technician training was greatly enhanced by the establishment in 1948 of dental technician schools at the U.S. Naval Training Centers, Great Lakes, IL, and San Diego, CA. In addition, a separate dental rating became effective on 2 April 1948. Enlisted personnel could thus be procured by direct recruitment into the dental rating group; they no longer were required to prepare themselves for advancement in a rating group (i.e., hospital corpsman) that did not reflect their duties.

Another effort during the postwar years was the establishment of naval dental clinics. These clinics, with dental officers in command, would provide dental care for all personnel within a given area. The first such clinic was established at the Naval Shipyard, Brooklyn, NY, on 13 March 1946. By the time the Korean conflict there were naval dental clinics at Pearl Harbor, Guam, Guantanamo Bay, and Washington, DC. Ultimately, there would be 11.

President Truman ordered the U.S. Armed Forces into action in Korea on 27 June 1950. Dental technicians, for the first time wearing dental rating in combat, worked alongside dental officers providing outstanding assistance. At the peak of the action, about 4,700 technicians were on duty.

After Korea, forces were reduced, but the Dental Corps participated in many new areas to support the Navy and Marine Corps, providing care and supporting research projects, such as the wintering over at McMurdo Sound, Antarctica, in 1958-59.

Several significant developments highlighted the 1950's. One of the more important events was the approval of Congress of the Dependents' Medical Care (Medicare) Act as Public Law 569 on 7 June 1956. When the act became effective in December, approximately 130,000 dependents overseas and in remote areas of the United States were made eligible for routine dental care. This resulted in a sizable increase in dental care demand.

At the Naval Dental School a high-speed dental handpiece was developed that made an important contribution to the development of high-speed instrumentation in dentistry. A lifelike manikin, "Mr. Disaster," was developed for use in casualty care courses. The manikin had a complete internal bleeding system and 10 simulated wounds. A dental officer correspondence course program was started. The program continues to this day with an annual enrollment of over 600 dental personnel from all the services.

The 1960's was an era of increasingly sophisticated dental research, expanded educational opportunities, and, again, support of our Navy and Marine Corps team in action. The first dental unit supporting the Marine Corps, detachment of the 3rd Dental Company, arrived in Vietnam on 29 June 1965.

During the Vietnam conflict support was provided to Marine Corps units by the 1st, 3rd, and 11th Dental Companies, along with detachments of the 15th Dental Company. This was



the first time that the dental company organization, which had been implemented in 1957, was tested in combat, and it proved to be a highly effective combat support element. In all, about 335 dental officers and 835 dental technicians served in Vietnam. The Dental Corps was recognized for its valuable support to the Marines, receiving six Presidential Unit Citations, six Navy Unit Commendations, and six Meritorious Unit Commendations.

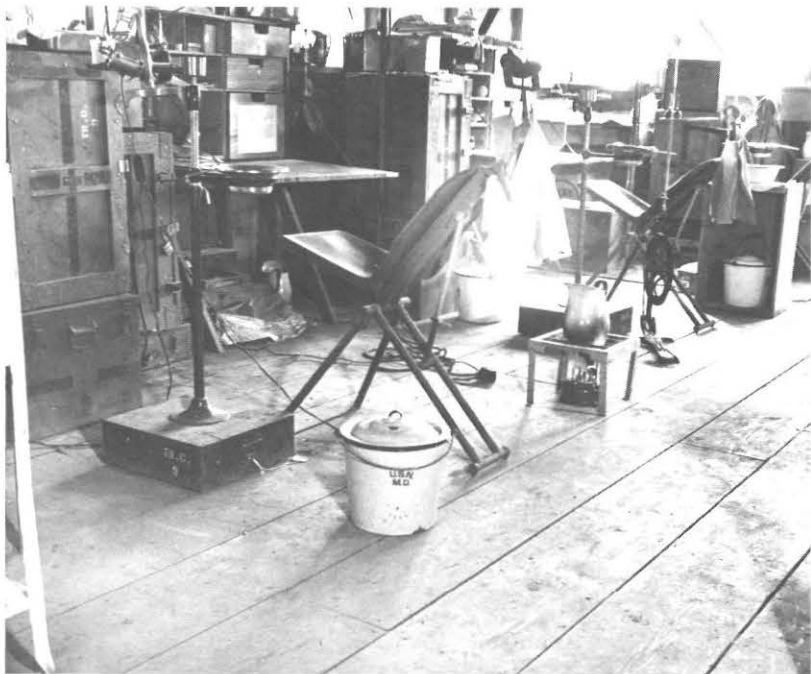
Many facilities were improved, many programs were certified, and many research projects were conducted, covering a broad range of subjects from the prevention of dental disease and techniques of bone grafting, to the development of mobile dental operatories for use in the field.

The 1970's was a vintage decade with many landmark improvements. Among the major challenges in the coming years would be the external review of Navy health care delivery and its complete reorganization, and with the end to the draft, the creation of an All Volunteer Force.



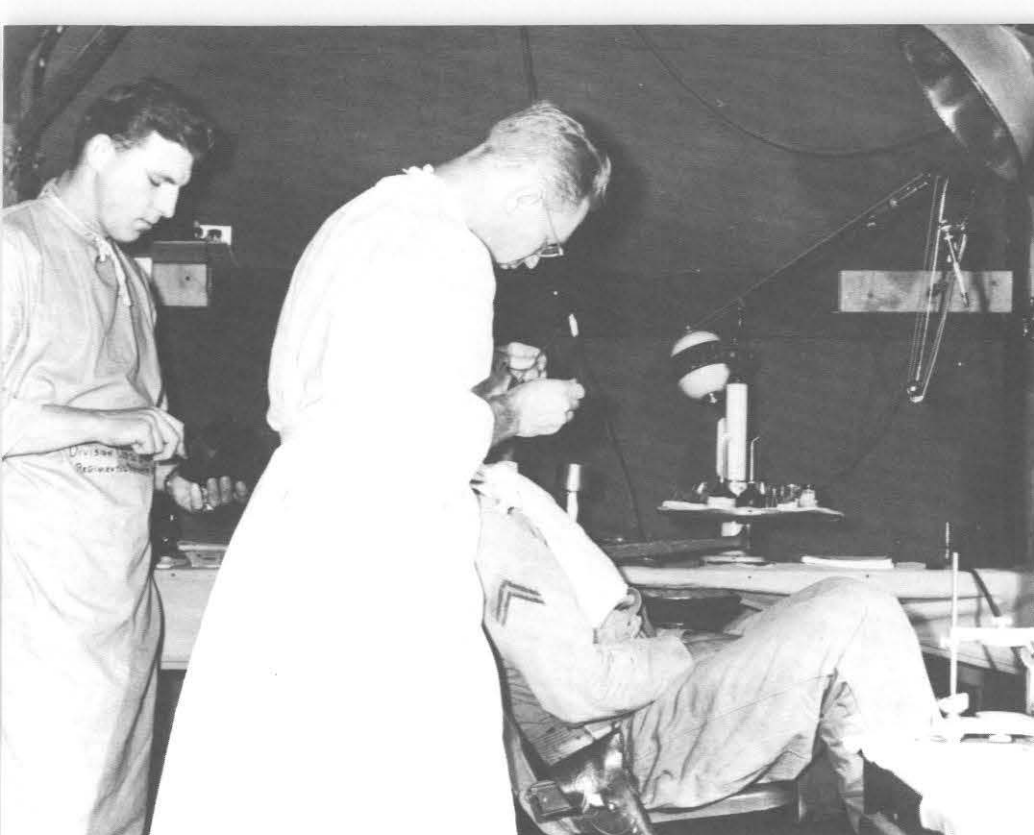


Left: With the Marshall Islands secured from the Japanese, a young native girl receives needed treatment from a Navy dentist in 1944. Below: Tent Camp 2 at Camp Pendleton, CA, was state-of-the-art field dentistry in 1944.



Below: This mobile dental unit was where marines of the First Marine Division saw their dentist in Korea.





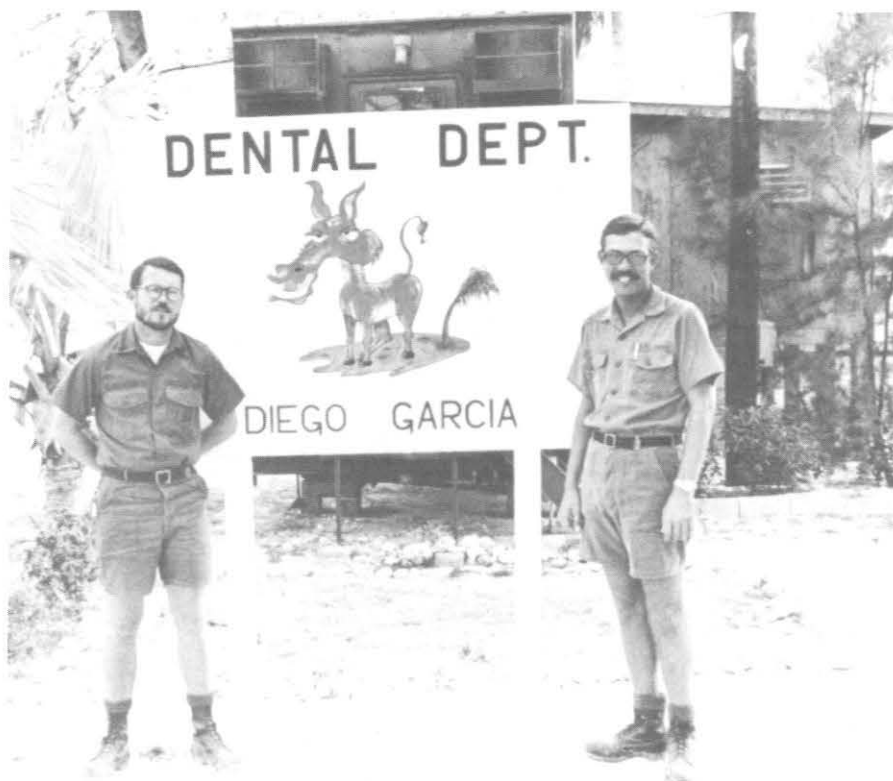
Left: A canvas-covered truck became a dental prosthetic unit at the First Marine Division regimental reserve area in Korea in 1952. Below: LT Max Perlitsh, DC, USNR, performs cold weather dentistry at McMurdo Sound, Antarctica, 1958-59.



Right: Dental Department, Diego Garcia, 1974.

A major change for the Dental Corps in the 1970's was regionalization. The first naval regional dental center was established at Norfolk, VA, on 1 July 1973. Eleven branch dental facilities were consolidated under a single entity. This marked the first time that dental facilities in a given area were placed under a regional director who had direct access to the Bureau of Medicine and Surgery. By the time regionalization was completed on 1 Oct 1976 there were 21 regional dental centers. However, some clinics, such as the one at Diego Garcia, remained isolated from regional dental support.

Several reorganizations of the Medical Department have occurred since 1976, with the most significant coming in 1982. The Bureau of Medicine and Surgery was divided into the Office of the Director of Naval Medicine in the organization of the Chief of Naval Operations (OP-093) and the Naval Medical Command, which would be responsible for implementation/execution of Medical Department policy for shore facilities. During the 1982



reorganization no specific organizational entity existed for the specific management of the dental health care delivery system. This was recognized and changed by the Secretary of the Navy, who directed organizational changes in November 1985. The Chief of the Navy Dental Corps assumed

duties as the Deputy Director of Naval Medicine for Dentistry in the Office of the Director of Naval Medicine in August 1986. The Secretary also directed that a dental flag officer billet be established in the headquarters of the Naval Medical Command to manage dental care operations.



*Dental Operator, USS Nimitz, 1975.*



Challenges in the 1980's included dental standards for fleet readiness, increased Naval Reserve mutual support cooperation, tri-service cooperation, the development of a dental management information system, increased contingency training in combat casualty care for dental officers, the development of the standards of care for dental specialties, and dental insurance for dependents.

Throughout our 75-year history, Navy dental officers have served with distinction aboard operational units and with the Fleet Marine Force. Most recently, LT T.G. Bigalow, DC, and LT T.J. Ware, DC, while assigned to the 24th MAU in October 1983, received the Bronze Star for heroic medical support to Marines following the terrorist bombing of the Marine bar-

Photo by HM3 David Vangelder



*Navy dentistry close up: The operator prepares a central incisor for restoration.*

racks at the Beirut International Airport in Lebanon. In 1987, 187 dental officers served aboard 79 ships and 162 officers were assigned to the Fleet Marine Force.

To ensure only the highest quality care is provided to the members of the Navy and Marine Corps, the Dental Corps has been a leader in all phases of dental postgraduate education, including residency training, correspondence courses, and continuing education courses. These educational opportunities are structured to satisfy Navy requirements for advanced specialty skills. The Naval Dental School, Bethesda, MD, provides postgraduate training in dental specialty fields for dental officers. Dental officers trained at the school have gone on to become leaders in education in dental schools across the nation. Earlier this spring, the Dental School moved into a modern educational and patient care facility at the historic Bethesda complex.

This year, the Dental Corps celebrates 75 years of tradition, progress, and challenge—through peace and conflict—in clinical care, education, and research. The thousands of dentists serving their country are proud of their accomplishments in support of the Navy and Marine Corps. The Dental Corps appreciates the dedication of many thousands of other devoted people who support and continue to support the mission, including dental technicians, Medical Service Corps officers, civilians, and Red Cross volunteers—all essential to our achievements.

Today, we look to the future with purpose and conviction using the past as a pathway to the future challenges. □

# Your Wartime Mission

LT Richard M. Cocrane, MSC, USN

What is your wartime mission? Every member of the Navy Medical Department has a peacetime assignment as well as an operational mission. Although you may now be working and training in a hospital, a medical clinic, or a dental clinic, your wartime mission might be with a Marine unit, on a hospital ship, or in an overseas medical facility.

The Medical Personnel Unit Augmentation System (MPUAS) currently tracks and assigns requirements for over 10,000 active duty medical mobilization billets. This number will increase to approximately 15,000 as the hospital ships and all fleet hospitals become operational.

To keep track of these assignments, the CONUS geographic regions are divided into three supporting units which augment the operating forces (see list). Each unit consists of two geographic regions which includes one major teaching hospital. Each unit supports a battle group consisting of one Marine Amphibious Force, several casualty receiving and treatment ships, overseas hospitals, and a por-

tion of the Rapidly Deployable Medical Facility (RDMF). Recently, both hospital ships and several fleet hospitals have been added to the system.

Here's how it works. During peacetime, medical and dental treatment facilities attached to the operating forces are staffed at a minimal level or not at all (i.e., RDMF, fleet hospitals). CONUS facilities provide health care to beneficiaries and train the staff for their wartime mission.

At the outbreak of war or other contingency, the operational commander requests that the Chief of Naval Operations (CNO) increase the medical staffing of his operating forces to its predetermined wartime manning level. If approved, CNO tasks the Naval Medical Command (NAVMEDCOM) to provide support. NAVMEDCOM then directs execution of the MPUAS by the appropriate geographic commands. The geographic commands task their medical/dental treatment facilities to provide the pre-identified personnel to the operating forces in order to bring them to their wartime manning level.

In peacetime these augmentees prepare for deployment. Every quarter, each augmentee verifies a personnel readiness checklist which contains items relative to their deployability. These items ensure that each member

has current immunizations, dog tags, and accurate health, dental, pay, and service records. Each augmentee knows the operational unit they will support and, in many cases, has trained with that unit.

The Mobile Medical Augmentation Readiness Team (MMART) system is a subset of the MPUAS. In peacetime MMART's provide surgical capabilities to the fleet. In a contingency the MMART system disappears and the MPUAS goes into effect. Surgical and surgical support teams of the MMART system are still assigned to their designated ships, but the remaining MMART's are given other MPUAS assignments.

If you are not designated to support a command of the operating forces, chances are that you will remain in CONUS to care for returning casualties and other active duty members. Your assignment may change as the mission of your command changes or as you transfer to another command.

Each command has a Medical Mobilization Planning Officer who is responsible for coordinating medical readiness issues. This officer knows your wartime assignment. If you don't know your operational mission, find this officer and get ready to do your part to support the fleet and Fleet Marines.

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LT Cocrane is assigned to the Medical Readiness Division (MEDCOM-412), NAVMEDCOM, Washington, DC 20372-5120.



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## Unit One

### *Augmentation Source Unit*

68056 NAVMEDCOM SW Region  
66099 NAVMEDCLINIC Port Hueneme  
45020 NAVMEDCLINIC San Diego  
68090 NAVHOSP Long Beach  
68094 NAVHOSP Camp Pendleton  
00259 NAVHOSP San Diego  
62947 NAVDENCLINIC Long Beach  
62594 NAVDENCLINIC Camp Pendleton  
66022 NAVDENCLINIC San Diego  
35734 NAVDENCLINIC North Island  
35949 NAVBRHOSP Twentynine Palms  
  
68097 NAVMEDCOM NW Region  
00619 NAVHOSP Oakland  
66097 NAVHOSP Oak Harbor  
66095 NAVHOSP Lemoore  
68095 NAVHOSP Bremerton  
68443 NAVDENCLINIC Bremerton  
68409 NAVDENCLINIC San Francisco  
35723 NAVDENCLINIC Lemoore  
65575 NAVMEDCLINIC Seattle  
35724 NAVDENCLINIC Moffett  
62287 NAVMEDCLINIC San Francisco

### *Augmentation Receiving Unit*

67448 1st Marine Division  
67446 1st FSSG  
42320 DET A 1st FSSG Twentynine Palms  
41638 DET B 1st FSSG  
31053 3rd MAW Unit Camp Pendleton  
31055 DET 3rd MAW YUMA  
55356 7th MAB  
57081 3rd MAW FMFPAC  
  
68721 NAVMEDCOM PAC Region  
68096 USNAVHOSP Guam  
68470 USNAVHOSP Okinawa  
68292 USNAVHOSP Yokosuka  
65491 USNAVHOSP Subic Bay  
68098 NAVMEDCLINIC Pearl Harbor  
68495 NAVDENCLINIC Yokosuka  
62313 NAVDENCLINIC Pearl Harbor  
68582 USNAVDENCLINIC Okinawa  
62328 USNAVDENCLINIC Guam  
68446 USNAVDENCLINIC Subic Bay  
  
0545A NEPMU-6 Pearl Harbor  
  
81141 RDMF HOSP 250-Bed 3  
81142 RDMF HOSP 250-Bed 4  
FLTHOSP 250-Bed CBZ #1  
FLTHOSP 250-Bed CBZ #2  
FLTHOSP 500-Bed CBZ #6  
  
20550 LHA-1 USS *Tarawa*  
07351 LPH-3 USS *Okinawa*  
07198 LPH-10 USS *Tripoli*  
07202 LPH-11 USS *New Orleans*  
21636 T-AH 19 USNS *Mercy*

## Unit Two

### *Augmentation Source Unit*

66818 NAVMEDCOM MIDLANT Region  
68722 NAVMEDCLINIC Norfolk  
68093 NAVHOSP Camp Lejeune  
66094 NAVHOSP Cherry Point  
61337 NAVHOSP Beaufort  
68084 NAVHOSP Charleston  
00183 NAVHOSP Portsmouth VA  
65999 NAVDENCLINIC Charleston  
68410 NAVDENCLINIC Camp Lejeune  
68411 NAVDENCLINIC Parris Island  
62753 NAVDENCLINIC Norfolk  
35047 NAVDENCLINIC Oceana

### *Augmentation Receiving Unit*

08321 2nd Marine Division  
55300 2nd FSSG  
09131 MAG 31 MCAS Beaufort  
09132 MAG 32 MCAS Beaufort  
09167 MAG 26 MCAS Jacksonville  
52841 MAG 29 MCAS Jacksonville  
57080 2nd MAW FMFLANT  
41627 DET A 2nd FSSG Cherry Point  
41629 DET B 2nd FSSG Beaufort  
41628 DENDET 2nd FSSG Jacksonville  
67026 HQ FMFLANT

(con.)

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## Unit Two (con.)

### *Augmentation Source Unit*

35044 NAVDENCLINIC Little Creek  
35045 NAVDENCLINIC NAS Norfolk  
  
68092 NAVMEDCOM NE Region  
00105 NAVMEDCLINIC Portsmouth NH  
68101 NAVHOSP Philadelphia  
68086 NAVHOSP Newport  
00211 NAVHOSP Great Lakes  
61726 NAVHOSP Groton  
62842 NAVDENCLINIC Philadelphia  
66023 NAVDENCLINIC Newport  
68326 NAVDENCLINIC Great Lakes  
35760 NAVDENCLINIC New London

### *Augmentation Receiving Unit*

61564 NAVHOSP Guantanamo  
65428 NAVHOSP Roosevelt Roads  
68445 NAVDENCLINIC Roosevelt Roads  
62333 NB Guantanamo BRDENCLINIC  
  
81140 RDMF HOSP 250-Bed 2  
FLTHOSP 500-Bed CBZ #3  
FLTHOSP 500-Bed CBZ #8  
  
07178 LPH-9 USS *Guam*  
20009 LPH-12 USS *Inchon*  
07350 LPH-2 USS *Iwo Jima*  
20725 LHA-4 USS *Nassau*  
20632 LHA-2 USS *Saipan*  
21637 T-AH 20 USNS *Comfort*

## Unit Three

### *Augmentation Source Unit*

68085 NAVMEDCOM SE Region  
66989 NAVMEDCLINIC New Orleans  
00267 NAVMEDCLINIC Key West  
00285 NAVHOSP Corpus Christi  
65492 NAVHOSP Orlando  
60002 NAVHOSP Memphis  
00203 NAVHOSP Pensacola  
00232 NAVHOSP Jacksonville  
68444 NAVDENCLINIC Jacksonville  
68441 NAVDENCLINIC Pensacola  
68496 NAVDENCLINIC Orlando  
41773 NAVDENCLINIC Memphis  
41778 NAVDENCLINIC Corpus Christi

### *Augmentation Source Unit*

00168 NAVMEDCOM NATCAP Region  
00162 NAVMEDCLINIC Annapolis  
00231 NAVMEDCLINIC Quantico  
32563 NAVMEDCLINIC Wash DC  
0498A NAVHOSP Bethesda  
66098 NAVHOSP Patuxent River  
0608A NAVDENCLINIC Bethesda  
35750 NAVDENCLINIC Annapolis  
35749 NAVDENCLINIC Quantico  
62312 NAVDENCLINIC Wash DC

### *Augmentation Receiving Unit*

67360 3rd Marine Division  
67339 1st Marine Brigade  
67408 FRBN FMFPAC  
67025 HQ FMFPAC  
67436 3rd FSSG  
41654 DET A 3rd FSSG  
57079 1st MAW  
41975 DET A 1st MAW  
67810 DET 11th DENCO 3rd DEN BN

### *Augmentation Receiving Unit*

68720 NAVMEDCOM EUR Region  
66096 USNAVHOSP Naples  
66101 USNAVHOSP Rota  
63032 USNAVHOSP Keflavik  
68442 USNAVHOSP Naples

### *Augmentation Receiving Unit*

62997 NEPMU-7 Naples  
  
81139 RDMF HOSP 250-Bed 1  
FLTHOSP 500-Bed CBZ #4  
FLTHOSP 500-Bed CBZ #5  
FLTHOSP 500-Bed CBZ #15

20633 LHA-3 USS *Belleau Wood*  
20748 LHA-5 USS *Peleliu*  
07352 LPH-7 USS *Guadalcanal*



# Plain Film Imaging of the TMJ

LCDR Thomas Weaver, DC, USN

Diseases and derangements of the temporomandibular joint, or TMJ, may or may not be occurring with greater frequency than in the past. Certainly, there is an increased interest in TMJ dysfunction from the standpoint of patients and clinicians alike. Clinical examination of the joint is aided by various imaging techniques, some using ionizing radiation, some not. Imaging techniques range from extremely sophisticated to relatively simple. This presentation briefly outlines current techniques for TMJ imaging and describes in detail plain film techniques that may be used in any dental clinic that has an intraoral dental X-ray unit.

**Magnetic Resonance Imaging (MRI).** At the sophisticated end of the scale is Magnetic Resonance Imaging (MRI). MRI utilizes strong magnetic fields and radio waves instead of ionizing radiation to produce an output that is processed by computer. The computer sorts the information and produces an image that rivals anatomic photographs in clarity. The drawbacks of MRI include cost and the expertise needed to perform the imaging. At the time of this writing, only one MRI unit had been acquired by the military services.

**Computed Axial Tomography (CAT).** The most sophisticated technique for TMJ imaging that uses ionizing radiation is Computed Axial Tomography (CAT), otherwise known as Computed Tomography (CT). The CT scan utilizes a spinning

drum with the X-ray source on one side of the drum, X-ray detectors on the opposite side of the drum, and the patient located (stationary) within the rotating drum. The drum rotates as radiation is emitted. The various structures in the path of the beam attenuate the radiation. The detectors on the far side of the drum sense this attenuation.

Each structure viewed, such as the TMJ, is scanned from many different directions. In more recently developed CT units, only the radiation source moves; the detector remains stationary. The principle remains the same. All information is fed into a computer, as with MRI, and the computer produces an image. As with MRI, CT requires a great deal of expertise. CT units are presently more readily available than MRI.

In both MRI and CT, a computer processes information obtained from the scan. In most of the techniques described below, the image is produced directly on film.

**Tomography.** Tomography is distinct from CT. This technique utilizes a moving radiation source and a moving film. By keeping one point stationary with respect to the film and radiation, as for example, the left TMJ, that point is the only anatomic structure in focus on the film. If the radiation source moves left, the film moves right. A line drawn from the film to the radiation source always passes through one point, the left TMJ in the example above, so that film and source move as a unit. This movement "blurs" all structures except the structure of interest.

Panoramic radiography is a form of tomography in which the jaws are "painted" onto the film, and the result-

ing image resembles a Jack-o-Lantern. Because the panoramic radiograph is a tomogram, only a "slice" of the TMJ may be imaged.

**Arthrography.** Arthrography is a dynamic technique in which a radioopaque dye is injected into the joint. Joint movement can then be viewed and video recorded via a fluoroscope. The technique is invasive, ranging from uncomfortable to painful, depending upon which patient is surveyed, and again the technique requires considerable expertise.

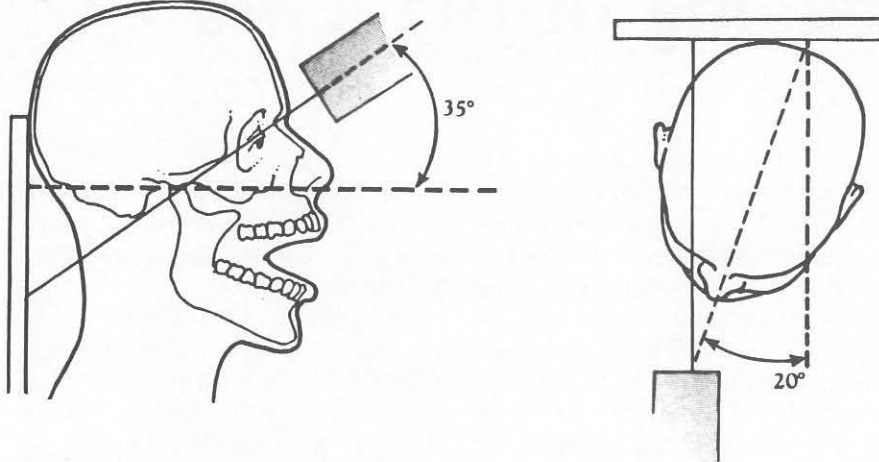
**Plain Film Techniques.** The advantages of the plain film techniques are that they are simple to perform, noninvasive, and can be performed in any dental office with an intraoral dental X-ray unit. The three techniques are (1) the transcranial projection, (2) the transpharyngeal projection, and (3) the transorbital projection. Like other plain film techniques, these minimize or tend to average out the bony structures that would otherwise obscure the structure of interest.

In the case of the transcranial projection the so-called central X-ray beam passes through the relatively constant thickness of the calvarium. In the transpharyngeal projection the central ray passes through only soft tissue prior to imaging the TMJ. In the transorbital projection the patient's head is positioned so that the thin bones of the orbit are the only structures overlying the joint on the film.

With the transcranial projection the central ray is directed at a point 2 inches above and one-half inch behind the external auditory meatus on one side of the head and toward the TMJ on the contralateral side. Many devices exist for "standardizing" the pro-

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Diagrams by Dr. Robert Langlais



1. Patient, radiographic unit, and film placement for the transorbital projection of the right TMJ.



Figure 1. Transorbital radiograph of the right mandibular condyle.

jection. Some radiologists swear by the technique, claiming that it is possible to evaluate therapy effectiveness by performing serial transcranial projections over a period of time and evaluating changes in the TMJ space. Other radiologists(1,2) insist that reproduction is impossible, and at least one study(3) indicates that only the lateral one-half to one-third of the condyle can be visualized using the transcranial projection. An additional disadvantage of the transcranial projection is the need for a positioning device. This may be expensive and require some expertise to use.

The most promising uses for plain films are to rule out bony pathosis of the condyle and in the diagnosis of fractures. Exposing transorbital and transpharyngeal projections of the TMJ provides for excellent visualization of the mediolateral and anteroposterior aspects of the condyle, respectively. These two projections, along with panoramic radiographs, where available (performed both with the jaws opened and closed), provide sufficient information in the prelimi-

nary TMJ workup. Following the initial workup, more exotic radiographic procedures *may* be desired, but their request should be based upon specific information obtained in the initial workup.

Excellent plain films have been obtained using the following techniques. A Kodak Lanex<sup>TM</sup> Regular 8-by 10-inch cassette and Kodak OL-1<sup>TM</sup> radiographic film were used to produce the radiographic images in this article. The exposure settings were 70 kVp, 15 mA, and 10 impulses.

### Transorbital Projection of the Condyle

- The patient should be seated comfortably in an upright position, looking forward, with the ala-tragus line parallel to the floor.
- The cassette is placed behind the patient's head parallel to the mid-coronal plane. The patient can hold the cassette in position.
- Rotate the mid-sagittal plane 20° toward the side of the condyle to be imaged. This moves the mastoid process and mastoid air cells out of the path

of the central ray. (If this rotation were not performed, the condyle would be obscured by the mastoid process and air cells.) Although the patient's head is rotated, the horizontal angulation of the X-ray tube head parallels the cassette. A vertical angulation of approximately 35° is used to direct the central ray through the orbit and toward the condyle (Diagram 1).

- Just prior to the exposure, the patient should be told to open as wide as possible, without moving his or her head.

Figure 1 shows a typical transorbital projection. Figure 2 shows a transorbital projection of a patient with a fractured condylar neck.

If the patient's head is not rotated far enough, a portion of the mastoid process may obscure part of the condyle. If the rotation is too great, the bones of the nasal complex may produce obscuration. If the vertical angulation is too great, the frontal bone will obscure the condyle; if too slight, the infraorbital rim of the maxilla will be superimposed on the desired object.



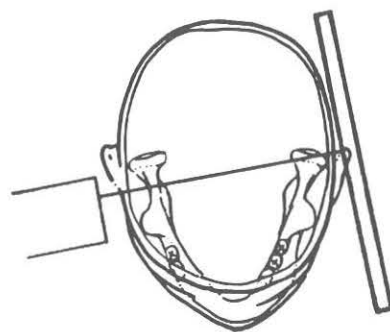
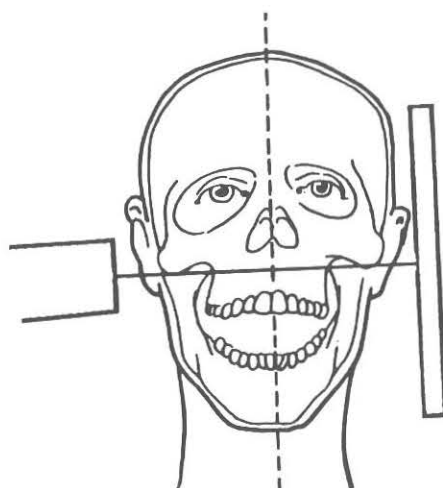


Figure 2. Transorbital radiograph of the right mandibular condyle. Note the fracture just beneath the condyle.

2. Patient, radiographic unit, and film placement for the transpharyngeal projection of the left TMJ.

### Transpharyngeal Projection of the Condyle

- The patient should be seated comfortably in an upright position, the alar-tragus line parallel to the floor, and the film cassette against the side of the face that is to be imaged. Again, the patient can hold the cassette in position.
- The film should be positioned per-

pendicular to the floor, but rotated 5-10° laterally away from the midsagittal plane (Diagram 2).

- The mouth is opened as wide as possible, and the central ray is aimed through the sigmoid notch of the contralateral ramus directly at the condyle on the side to be imaged.

Figure 3 shows a typical transpharyngeal projection taken with an intraoral X-ray unit. A transpharyngeal or transorbital projection may be obtained with less patient exposure than the transcranial projection since the dense bone of the cranium is not penetrated.

### Conclusion

There are many imaging techniques that may be used to view the TMJ. Two plain film techniques, the transorbital and transpharyngeal projections, may be obtained easily in any dental office, whether ashore or afloat, at a minimal cost. By providing this service to the patient, a more complete workup may be obtained, and the patient need not spend hours in the

waiting room of a busy radiology service, not to mention the time needed to travel to the hospital or medical clinic. The dentist may also benefit from the variation in routine and an enhancement in professional knowledge and esteem.

### References

1. Langlais RP: Personal communication. San Antonio, TX, August 1985.
2. Terezhalmay GT: Clinical Pathologic Conference on Facial Pain. 40th annual meeting of the American Academy of Oral Medicine, Toronto, Ontario, Canada, May 1986.
3. Dixon DC, Graham GS, Mayhew RB, Oesterle LJ, Simms D, Pierson WP: The validity of transcranial radiography in diagnosing TMJ anterior disc displacement. *JADA* 108(4):615-618, April 1984.

### Bibliography

- Langland OE, Langlais RP, Morris CR: *Principles and Practice of Panoramic Radiology*. Philadelphia, WB Saunders Co, 1986.
- Langland OE, Sippy FH, Langlais RP: *Textbook of Dental Radiology*, ed 2. Springfield, IL, Charles C Thomas Co, 1984.
- Curry TS III, Dowdy JE, Murry RC Jr: *Christensen's Introduction to the Physics of Diagnostic Radiology*, ed 3. Philadelphia, Lea & Febiger Co, 1984. □

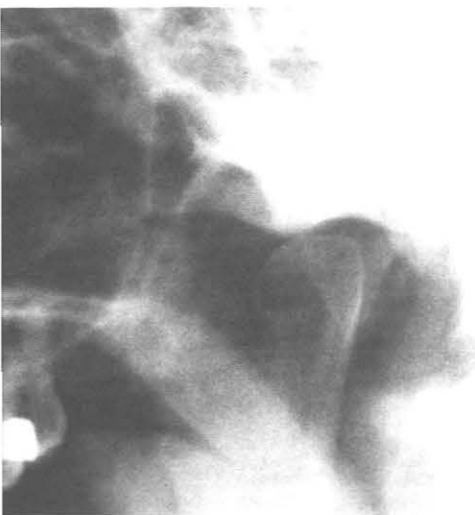


Figure 3. Transpharyngeal radiograph of the right TMJ.

## Plain But Practical

# Tzanck Smears

CDR Dennis A. Vidmar, MC, USN

The use of cutaneous cytology for diagnosis is well established but continues to be underutilized by all medical practitioners, even by dermatologists. This is unfortunate because cytology can assist the clinician in making a rapid diagnosis where more than mere academic interest is at stake.

\* \* \*

A pregnant woman presents at term in labor with an itchy generalized vesiculobullous eruption. The clinical diagnoses of varicella or bullous dermatosis of pregnancy (herpes gestationis) is considered. If she has varicella, there is substantial risk of neonatal morbidity/mortality. A varicella zoster virus (VZV) culture will take at least a week to yield results. *What do you do?*

A lymphoma patient undergoing chemotherapy has a 1-week history of "dry crusted lips" and a few new facial blisters as well as fever and malaise. Intravenous antibiotic therapy is being contemplated. You are wondering whether his skin lesions may be of clinical relevance. *What would you do?*

An otherwise well neonate develops a few scattered vesicular lesions on an erythematous base. Does this baby have an unusual form of an erythema toxicum neonatorum or early herpes simplex neonatorum (HSV)? If the diagnosis is HSV, the administration of IV acyclovir may alter a frequently bleak outcome. Viral culture will require at least 24 hours. *What would you do?*

A physician reluctantly presents with a history of recurrent "blistering eczema" on his thumb. The charge nurse of the oncology ward where he is assigned is uneasy about this and has recommended evaluation. Most of the patients are immunocompromised. An HSV culture will require at least 24 hours. Is there cause for concern? *What would you do?*

The answer, of course, is a Tzanck smear.

\* \* \*

These case histories are from patients recently seen by our department where the rapid diagnosis of HSV and VZV infection was made on what superficially appeared to be innocuous cutaneous eruptions. Clinically significant prognostications and decisions concerning antiviral chemotherapy were based on the Tzanck smears of representative lesions.

### History

Tzanck was one of the first to seriously apply cytologic techniques to the diagnosis of vesiculobullous skin disorders in 1949.(1) Blank et al. championed their use in the United States in the early 1950's.(2) Graham et al. confirmed the utility of cytology in a variety of inflammatory diseases of the skin, including HSV and VZV.(3) Although useful in a variety of diseases, cutaneous cytology is most helpful in confirming the diagnosis of herpes simplex, varicella, or zoster. Of course, this frequently involves patients with the recent onset of a vesiculobullous eruption.

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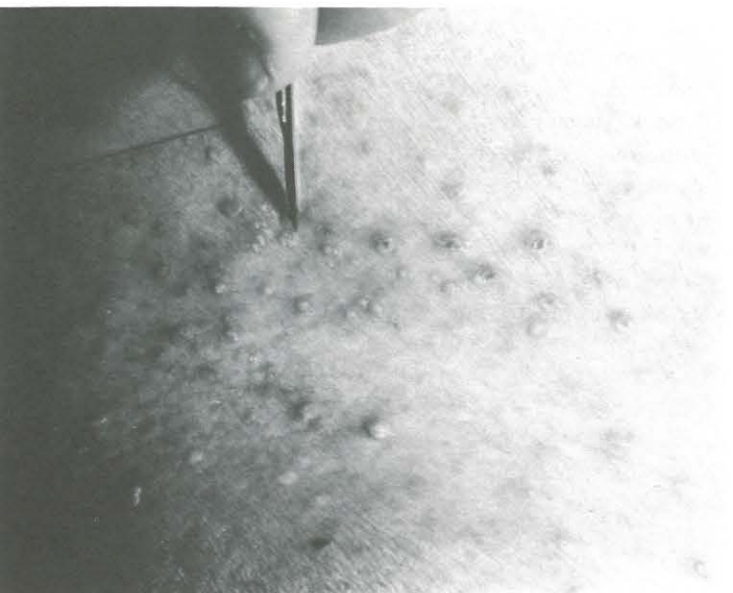


Figure 1. Tangential incision of vesicle

Figure 2. Alcohol fixative and cytologic stains



## Technique

Over the years a variety of methods have been successfully employed for Tzanck smears.(4,5) All are variations upon the same six-point theme of:

1. Lesion selection and incision
2. Application of cytologic specimen to a slide
3. Fixation
4. Staining
5. Drying and mounting
6. Interpretation

An intact vesicle yields the best results, although pustules and encrusted ulcers may be employed if necessary. The designated lesion should be cleansed with an alcohol swab and left to dry. The lesion is then tangentially unroofed at the edge with a #15 surgical blade. The floor of the lesion is scraped with the blade taking care not to generate hemorrhage (extraneous RBC's complicate cytologic interpretation) (Figure 1). The blade is touched several times to a clean, dry microscope slide. After fixation for a minute in methanol or absolute ethanol, the slide is stained (Figure 2). Although a wide variety of stains have been used (see table), our department uses a two-step technique with commercially available reagents (Hemal I and II). The slide is placed for 10-15 seconds in a 0.4 percent eosin solution, rinsed briefly with tap water, and counterstained with a mixture of 0.2 percent azure/0.2 percent methylene blue for 10-15 seconds. After rinsing

with tap water, the slide is blotted gently with a soft paper towel, then allowed to air dry. A small amount of immersion oil is placed upon the stained specimen and mounted with a coverslip.

The slide should be scanned using a conventional bright-field microscope at 10X with the goal of identifying giant epithelial cells having homogeneously stained chromatin (Figure 3). Most of these cells will contain two or more nuclei which frequently interdigitate or overlap. Confirmation of this morphology is obtained with the 40X objective. These diagnostic cells are larger than normal epithelial cells. The nuclei stains purple while the cytoplasm stains blue using the technique outlined above.

### Stains Employed in Tzanck Smears

Giemsa
Wright
Papanicolaou
Hematoxylin-eosin (rapid and standard)
Eosin/azure-methylene blue (Hemal)
Panagon multiple stain (PMS)
Toluidine blue

## Discussion

With the advent of practical, more widely available cell culture methodology for HSV and VZV, one may question the contemporary relevance of the Tzanck smear. Even in 1987 there are four strong arguments in favor of cytology as a primary diagnostic procedure: speed, reliability, availability, and cost.

It takes about 5 minutes to do a Tzanck smear. In comparison, the most optimistic response time for a HSV culture is 24 hours; for VZV, 1-2 weeks. The four sample cases presented at the start of this review illustrate the speed advantage of the Tzanck smear in crucial clinical situations.

The reliability of a Tzanck smear has been compared with a viral culture in HSV infections by Solomon et al.<sup>(6)</sup> While the viral culture was unquestionably more sensitive, the Tzanck smear was still positive two-thirds of the time if a vesicular lesion was sampled. Therefore, a positive Tzanck smear is of clinical significance whereas a negative smear does not necessarily exclude HSV infection. It is worth noting that the diagnostic accuracy of both viral culture and Tzanck smear waned if pustular or crusted lesions were examined.

The same group performed a similar analysis of typical VZV infections, both varicella and zoster.<sup>(7)</sup> They demonstrated that while 100 percent of their varicella patients had positive Tzanck smears, only 60 percent yielded a diagnostic viral culture. They obtained comparable results with zoster patients. In other words, Tzanck smear was more accurate than viral culture. They also found that the diagnostic yield of Tzanck smear and viral culture decreased if pustular or crusted lesions were sampled instead of vesicles. The superiority of Tzanck smear in VZV infection is not surprising due to the difficulty of growing the VZ virus under ideal conditions. VZV proliferates at a much slower

rate than HSV. The resultant longer incubation time predisposes the tissue culture to bacterial contamination. In addition, VZV is much less tolerant to storage and transportation than HSV. It must be inoculated immediately into culture to maximize recovery. This obviously makes VZV culture impractical in an operational or branch clinic environment.

In contrast, a Tzanck smear requires little in the way of equipment or manpower. In fact, any conscientious practitioner can be trained in its interpretation. Obtaining Tzanck smears from recurrent lesions of known HSV eruptions (e.g., lip cold sores) is a convenient way of gaining experience. No esoteric staining methods are required. In an operational setting, a simple Wright-Giemsa stain will yield a good quality smear, albeit not as rapidly.

The issue of cost is worth mentioning. In the civilian sector, the performance and interpretation of a Tzanck smear costs at least \$50 less than viral culture.<sup>(6)</sup>

## Conclusion

The Tzanck smear is a frequently overlooked diagnostic tool in our age of high-tech medicine. It is rapid, practical, and accurate. Its reliability, in fact, surpasses viral culture in VZV infections. The performance of this technique is just as handy and relevant to the practice of medicine in a tertiary care medical center as it is in an operational environment. Try it, you'll like it.

## Materials

Most large laboratory supply houses market some of the solutions mentioned in the table:

1. Hemal Stain (Solutions I and II) Hemal Stain Co., 397 Main St., Danbury, CT 06810
2. Polysciences Multiple Stain (PMS) Polysciences Inc., Paul Valley Industrial, Paul Valley Industrial Park, Warrington, PA 18976
3. Fungal Stains for wet mounts (similar to PMS, useful as well for Tzanck smear) Dermatologic Lab & Supply Co., Ridge St., Council Bluffs, IA 51501

## References

1. Tzanck A: Le cytodagnostic immediat en dermatologie. *Bull Soc Fr Dermatol Syph* 7:68, Feb 1947.
2. Blank H, Burgoon CF, Baldrige CA, McCarthy PL: Cytologic smears in diagnosis of herpes simplex, herpes zoster, and varicella. *JAMA* 146:1410-1412, 1951.
3. Graham JH, Bingul O, Burgoon CB: Cytodiagnosis of inflammatory dermatoses. *Arch Dermatol* 87:118-127, 1963.
4. Barr R: Cutaneous cytology. *J Am Acad Dermatol* 10:163-180, 1984.
5. Barr RJ, Henton RJ, Graham JH: Rapid method for Tzanck preparations. *JAMA* 237:1119-1120, 1977.
6. Solomon AR, Rasmussen JE, et al: The Tzanck smear in the diagnosis of cutaneous herpes simplex. *JAMA* 251:633-635, 1984.
7. Solomon AR, Rasmussen JE, et al: A comparison of the Tzanck smear and viral isolation in varicella and herpes zoster. *Arch Dermatol* 122:282-285, 1986. □



Figure 3. Large, multinucleated giant cell, diagnostic of HSV and VZV infection



## VADM Zimble Assumes Duty as Surgeon General and Director of Naval Medicine

On 1 July 1987 VADM Lewis M. Seaton, MC, retired and VADM James A. Zimble, MC, became the Navy's 30th Surgeon General.

VADM Zimble was born 12 Oct 1933 in Philadelphia, PA. He graduated from Franklin and Marshall College, Lancaster, PA, with a Bachelor of Science degree and received his medical degree from the University of Pennsylvania School of Medicine in 1959. He served in the Naval Reserve as a medical student from 1955-1959.

After serving a rotating internship at Naval Hospital, St. Albans, NY, from 1959 to 1960, VADM Zimble attended the Deep Sea Diving School, Naval Gun Factory, Washington, DC; the Officer's Basic Course and Special Radiation Control and Health Physics Course, U.S. Naval Submarine School, New London, CT; and nuclear power training at the Nuclear Reactor Prototype, West Milton, NY.

VADM Zimble was subsequently assigned to the USS *John Marshall* (SSBN-611). In 1963 he received Submarine Medical Qualification. Follow-on assignments included: OB-GYN staff, Naval Hospital, Camp Pendleton, CA (1966-1970); OB-GYN staff, Naval Hospital, Philadelphia, PA (1970-1972); Chief, OB-GYN Service and Director, Clinical Services, Naval Hospital, Lemoore, CA (1972-1976); Director, Clinical Services, Naval Regional Medical Center, Long Beach, CA (1976-1978); Commanding Officer, Naval Regional Medical Center, Orlando, FL (1978-1981); The Medical Officer, U.S. Marine Corps (1981-1983); Fleet Surgeon, Commander in Chief, U.S. Atlantic Fleet with additional duty as Command Surgeon, U.S. Atlantic Command and Medical Advisor to Supreme Allied Command, Atlantic (1983-1986). In February 1986 he reported to the Office of the Assistant Secretary of Defense (Health Affairs) as Deputy Assistant Secretary (Strategic Planning and Medical Program Management).

VADM Zimble completed his residency training in Obstetrics and Gynecology at Naval Hospital, St. Albans, NY, in 1966. He is a diplomate of the American Board of Obstetrics and Gynecology, a fellow of the American College of Obstetrics and Gynecology, a member of the American Medical Association, the Association of Military Surgeons of the United States, and the Inter-Agency Institute for Federal Health Care Executives.

His military decorations include the Defense Superior Service Medal, Legion of Merit (three awards), the Defense Meritorious Service Medal, the Meritorious Service Medal, the Navy Commendation Medal, and the Navy Meritorious Unit Citation.

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